CONTRACT: C202043 ID: R-2107B

NOTE: SEE SHEET 1A FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

CONTENTS

LINE	STATION	PLAN	PROFILE	XSECT
-L-	15+00 TO 63+00	4-8	9-10	
DRIVE	10+17.50 TO 16+21.78	7	11	

SOIL SAMPLE DATA SHEET 12

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

ROADWAY SUBSURFACE INVESTIGATION

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2107B	1	12

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34373.1.1		PE
34373.2.2		R/W & UTIL
34373.3.5		CONST.

PROJ. REFERENCE NO. *34373.1.1* F.A. PROJ. _____

COUNTY *MONTGOMERY*

PROJECT DESCRIPTION *NC 24-27 (EAST MAIN STREET) FROM US 220A (NORTH/SOUTH MAIN STREET) TO I-73/74 US 220*

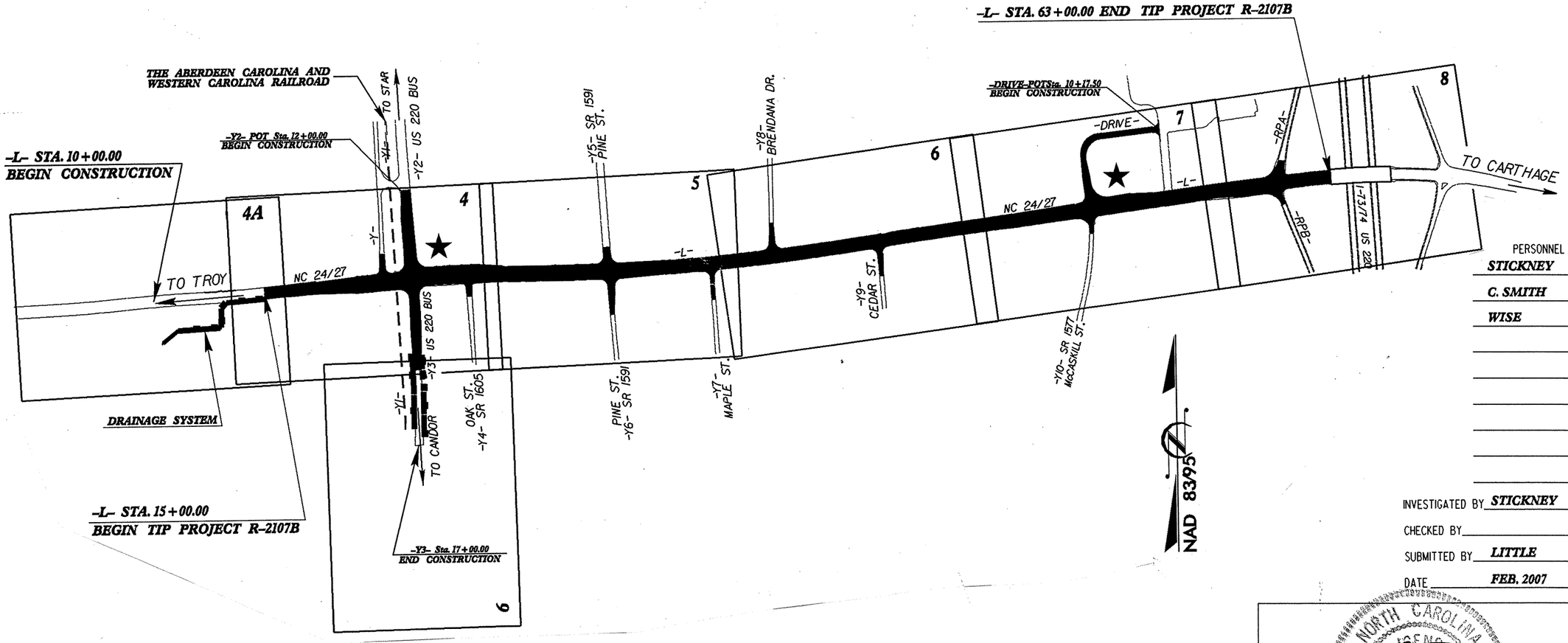
CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING, AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES, AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) 250-4088. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA ARE PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION, AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THIS PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

INVENTORY



PERSONNEL
STICKNEY
C. SMITH
WISE

INVESTIGATED BY *STICKNEY*

CHECKED BY _____

SUBMITTED BY *LITTLE*

DATE *FEB. 2007*

NORTH CAROLINA LICENSED SEAL 11043 GEOLOGIST CLINTON B. LITTLE 2-13-07

DRAWN BY: *LITTLE*

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IT IS CONSIDERED TO BE PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

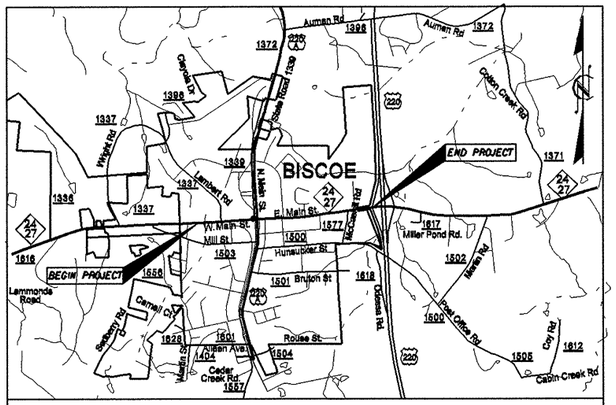
NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

09/08/99

TIP PROJECT: R-2107B

CONTRACT:

See Sheet 1-A For Index of Sheets



VICINITY MAP

THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARY OF BISCOE.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MONTGOMERY COUNTY

LOCATION: NC 24-27 (EAST MAIN ST.) FROM US 220A (NORTH/SOUTH MAIN ST.) TO I-73/74 US 220

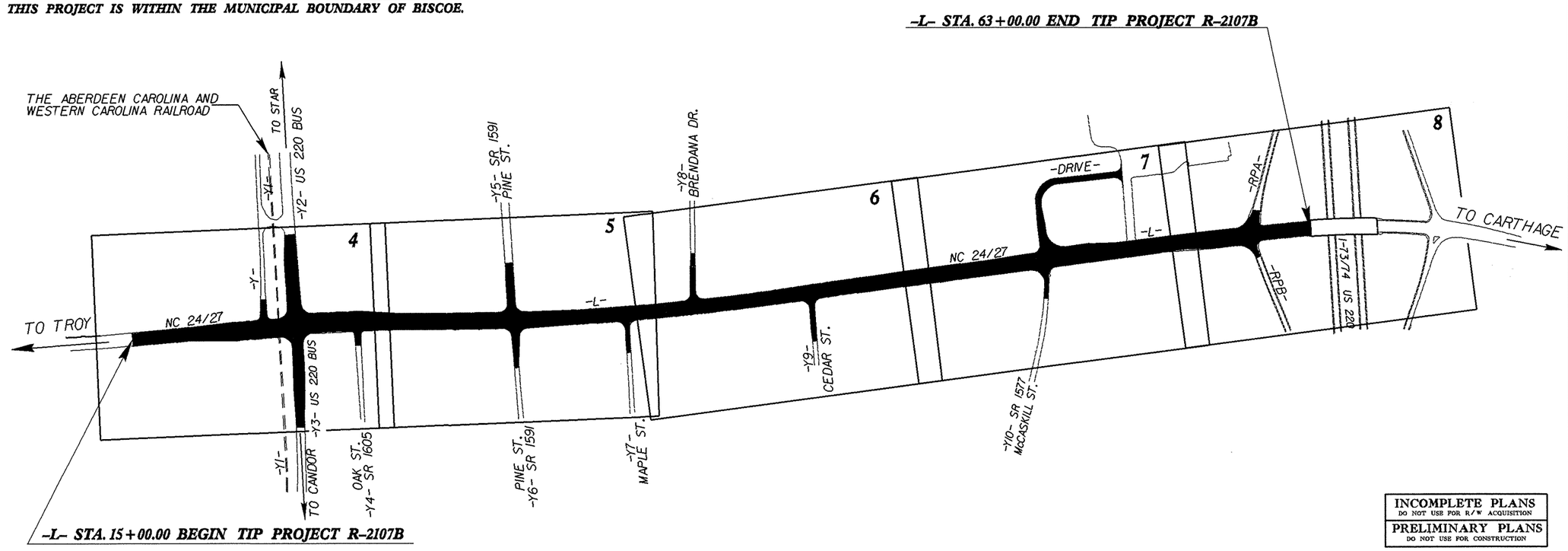
TYPE OF WORK: GRADING, DRAINAGE, CURB & GUTTER AND PAVING

NAD 83

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2107B	1A	12

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34373.1.1		PE

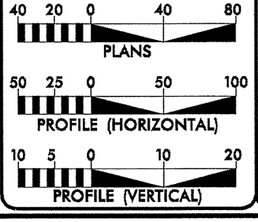
NOTE: THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.



INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES



DESIGN DATA

ADT 2008 = 19,400
ADT 2028 = 29,700
DHV = 10 %
D = 40 %
T = 11 % *
V = 40 MPH
* TTST 7% DUAL 4%

FUNCTIONAL CLASSIFICATION
MINOR ARTERIAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2107B = 0.909 MILES

TOTAL LENGTH OF TIP PROJECT R-2107B = 0.909 MILES

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JUNE 15, 2007

LETTING DATE: JANUARY 20, 2009

G. E. BREW, P.E.
PROJECT ENGINEER

I. T. YOUNIS
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

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PROJECT REFERENCE NO.	SHEET NO.
37373.1.1	2

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION

SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (AASHTO T206, ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLE:

VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6

SOIL LEGEND AND AASHTO CLASSIFICATION

GENERAL CLASS.	GRANULAR MATERIALS (≤ 35% PASSING #200)							SILT-CLAY MATERIALS (> 35% PASSING #200)				ORGANIC MATERIALS		
GROUP CLASS.	A-1		A-3	A-2				A-4	A-5	A-6	A-7	A-1, A-2 A-3	A-4, A-5 A-6, A-7	
	A-1-a	A-1-b		A-2-4	A-2-5	A-2-6	A-2-7				A-7-5 A-7-6			
SYMBOL														
% PASSING #10 #40 #200	50 MX 30 MX 15 MX	50 MX 25 MX	51 MN 10 MX	35 MX	35 MX	35 MX	35 MX	36 MN	36 MN	36 MN	36 MN	GRANULAR SOILS	SILT-CLAY SOILS	MUCK, PEAT
LIQUID LIMIT	6 MX		NP	40 MX	41 MN	40 MX	41 MN	40 MX	41 MN	40 MX	41 MN	SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER		HIGHLY ORGANIC SOILS
PLASTIC INDEX				10 MX	10 MX	11 MN	11 MN	10 MX	11 MN	11 MN	11 MN			
GROUP INDEX	0		0	0		4 MX		8 MX	12 MX	16 MX	No MX			
USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS. GRAVEL, AND SAND		FINE SAND	SILTY OR CLAYEY GRAVEL AND SAND				SILTY SOILS		CLAYEY SOILS				
GEN. RATING AS A SUBGRADE	EXCELLENT TO GOOD							FAIR TO POOR				FAIR TO POOR	POOR	UNSUITABLE

PI OF A-7-5 SUBGROUP IS ≤ LL - 30 ; PI OF A-7-6 SUBGROUP IS > LL - 30

CONSISTENCY OR DENSENESS

PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTENCE (N-VALUE)	RANGE OF UNCONFINED COMPRESSIVE STRENGTH ($TONS/FT^2$)
GENERALLY GRANULAR MATERIAL (NON-COHESIVE)	VERY LOOSE	<4	N/A
	LOOSE	4 TO 10	
	MEDIUM DENSE	10 TO 30	
	DENSE	30 TO 50	
	VERY DENSE	>50	
GENERALLY SILT-CLAY MATERIAL (COHESIVE)	VERY SOFT	<2	<0.25
	SOFT	2 TO 4	0.25 TO 0.50
	MEDIUM STIFF	4 TO 8	0.5 TO 1.0
	STIFF	8 TO 15	1 TO 2
	VERY STIFF	15 TO 30	2 TO 4
	HARD	>30	>4

TEXTURE OR GRAIN SIZE

U.S. STD. SIEVE SIZE	4	10	40	60	200	270
OPENING (MM)	4.76	2.00	0.42	0.25	0.075	0.053

BOULDER (BLDR.)	COBBLE (COB.)	GRAVEL (GR.)	COARSE SAND (CSE. SD.)	FINE SAND (F SD.)	SILT (SL.)	CLAY (CL.)

GRAIN SIZE	MM	305	75	2.0	0.25	0.05	0.005
	IN.	12	3				

SOIL MOISTURE - CORRELATION OF TERMS

SOIL MOISTURE SCALE (ATTERBERG LIMITS)	FIELD MOISTURE DESCRIPTION	GUIDE FOR FIELD MOISTURE DESCRIPTION
	- SATURATED - (SAT.)	USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE
LL — LIQUID LIMIT		
PLASTIC RANGE (PI)	- WET - (W)	SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE
PL — PLASTIC LIMIT		
OM — OPTIMUM MOISTURE	- MOIST - (M)	SOLID; AT OR NEAR OPTIMUM MOISTURE
SL — SHRINKAGE LIMIT		
	- DRY - (D)	REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE

PLASTICITY

	PLASTICITY INDEX (PI)	DRY STRENGTH
NONPLASTIC	0-5	VERY LOW
LOW PLASTICITY	6-15	SLIGHT
MED. PLASTICITY	16-25	MEDIUM
HIGH PLASTICITY	26 OR MORE	HIGH

COLOR

DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.

GRADATION

WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE.
UNIFORM - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. (ALSO POORLY GRADED)
GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES.

ANGULARITY OF GRAINS

THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.

MINERALOGICAL COMPOSITION

MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.

COMPRESSIBILITY

SLIGHTLY COMPRESSIBLE	LIQUID LIMIT LESS THAN 31
MODERATELY COMPRESSIBLE	LIQUID LIMIT EQUAL TO 31-50
HIGHLY COMPRESSIBLE	LIQUID LIMIT GREATER THAN 50

PERCENTAGE OF MATERIAL

ORGANIC MATERIAL	GRANULAR SOILS	SILT - CLAY SOILS	OTHER MATERIAL	
TRACE OF ORGANIC MATTER	2 - 3%	3 - 5%	TRACE	1 - 10%
LITTLE ORGANIC MATTER	3 - 5%	5 - 12%	LITTLE	10 - 20%
MODERATELY ORGANIC	5 - 10%	12 - 20%	SOME	20 - 35%
HIGHLY ORGANIC	>10%	>20%	HIGHLY	35% AND ABOVE

GROUND WATER

- WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING
- STATIC WATER LEVEL AFTER 24 HOURS
- PW — PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA
- SPRING OR SEEP

MISCELLANEOUS SYMBOLS

- ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION
- SOIL SYMBOL
- ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT
- INFERRED SOIL BOUNDARY
- INFERRED ROCK LINE
- ALLUVIAL SOIL BOUNDARY
- 25/025 — DIP & DIP DIRECTION OF ROCK STRUCTURES
- SOUNDING ROD
- SPT CPT DPT DMT VST PMT — TEST BORING
- AUGER BORING
- CORE BORING
- MW — MONITORING WELL
- PIEZOMETER INSTALLATION
- SLOPE INDICATOR INSTALLATION
- SPT N-VALUE
- REF — SPT REFUSAL

SAMPLE DESIGNATIONS

- S - BULK SAMPLE
- SS - SPLIT SPOON SAMPLE
- ST - SHELBY TUBE SAMPLE
- RS - ROCK SAMPLE
- RT - RECOMPACTED TRIAXIAL SAMPLE
- CBR - CALIFORNIA BEARING RATIO SAMPLE

ABBREVIATIONS

AR - AUGER REFUSAL
BT - BORING TERMINATED
CL. - CLAY
CPT - CONE PENETRATION TEST
CSE. - COARSE
DMT - DILATOMETER TEST
DPT - DYNAMIC PENETRATION TEST
e - VOID RATIO
F - FINE
FOSS. - FOSSILIFEROUS
FRAC. - FRACTURED, FRACTURES
FRAGS. - FRAGMENTS
HI. - HIGHLY
MED. - MEDIUM
MICA. - MICACEOUS
MOD. - MODERATELY
NP - NON PLASTIC
ORG. - ORGANIC
PMT - PRESSUREMETER TEST
SAP. - SAPROLITIC
SD. - SAND, SANDY
SL. - SILT, SILTY
SLI. - SLIGHTLY
TCR - TRICONE REFUSAL
w - MOISTURE CONTENT
V - VERY
VST - VANE SHEAR TEST
WEA. - WEATHERED
γ - UNIT WEIGHT
γ_d - DRY UNIT WEIGHT

EQUIPMENT USED ON SUBJECT PROJECT

DRILL UNITS:
- [ ] MOBILE B-___
- [ ] BK-51
- [ ] CME-45C
- [X] CME-550
- [ ] PORTABLE HOIST
- [ ] _____
- [ ] _____

ADVANCING TOOLS:
- [ ] CLAY BITS
- [ ] 6" CONTINUOUS FLIGHT AUGER
- [X] 8" HOLLOW AUGERS
- [ ] HARD FACED FINGER BITS
- [X] TUNG.-CARBIDE INSERTS
- [ ] CASING [ ] W/ ADVANCER
- [ ] TRICONE _____" STEEL TEETH
- [ ] TRICONE _____" TUNG.-CARB.
- [ ] CORE BIT
- [ ] _____

HAMMER TYPE:
- [X] AUTOMATIC [ ] MANUAL

CORE SIZE:
- [ ] -B_____
- [ ] -N_____
- [ ] -H_____

HAND TOOLS:
- [ ] POST HOLE DIGGER
- [X] HAND AUGER
- [ ] SOUNDING ROD
- [ ] VANE SHEAR TEST
- [ ] _____

ROCK DESCRIPTION

HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT IF TESTED, WOULD YIELD SPT REFUSAL. AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. IN NON-COASTAL PLAIN MATERIAL, THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK.
ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:

WEATHERED ROCK (WR)	NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.
CRYSTALLINE ROCK (CR)	FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.
NON-CRYSTALLINE ROCK (NCR)	FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YEILD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.
COASTAL PLAIN SEDIMENTARY ROCK (CP)	COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.

WEATHERING

FRESH	ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.
VERY SLIGHT (V SLI.)	ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN, CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE.
SLIGHT (SLI.)	ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.
MODERATE (MOD.)	SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK.
MODERATELY SEVERE (MOD. SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND WHEN STRUCK. *IF TESTED, WOULD YIELD SPT REFUSAL*
SEVERE (SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. *IF TESTED, YIELDS SPT N VALUES > 100 BPF*
VERY SEVERE (V SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT THE MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE SUCH THAT ONLY MINOR VESTIGES OF THE ORIGINAL ROCK FABRIC REMAIN. *IF TESTED, YIELDS SPT N VALUES < 100 BPF*
COMPLETE	ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.

ROCK HARDNESS

VERY HARD	CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.
HARD	CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.
MODERATELY HARD	CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS.
MEDIUM HARD	CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.
SOFT	CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE.
VERY SOFT	CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGERNAIL.

FRACTURE SPACING

TERM	SPACING
VERY WIDE	MORE THAN 10 FEET
WIDE	3 TO 10 FEET
MODERATELY CLOSE	1 TO 3 FEET
CLOSE	0.16 TO 1 FEET
VERY CLOSE	LESS THAN 0.16 FEET

BEDDING

TERM	THICKNESS
VERY THICKLY BEDDED	> 4 FEET
THICKLY BEDDED	1.5 - 4 FEET
THINLY BEDDED	0.16 - 1.5 FEET
VERY THINLY BEDDED	0.03 - 0.16 FEET
THICKLY LAMINATED	0.008 - 0.03 FEET
THINLY LAMINATED	< 0.008 FEET

INDURATION

FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF THE MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.

FRIABLE	RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.
MODERATELY INDURATED	GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.
INDURATED	GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.
EXTREMELY INDURATED	SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.

TERMS AND DEFINITIONS

ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.

AQUIFER - A WATER BEARING FORMATION OR STRATA.

ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.

ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, AS SHALE, SLATE, ETC.

ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE.

CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.

COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE.

CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.

DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.

DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL.

DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.

FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.

FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.

FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL.

FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.

FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.

JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.

LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT.

LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.

MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.

PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM.

RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.

ROCK QUALITY DESIGNATION (RQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.

SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.

SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS.

SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.

STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.

STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.

STRATA ROCK QUALITY DESIGNATION (SRQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.

TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.

BENCH MARK:

ELEVATION: FT.

NOTES:

REVISED 02/23/06

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

February 8, 2007

STATE PROJECT: 34373.1.1 (R-2107B)
COUNTY: Montgomery
DESCRIPTION: NC 24-27 (East Main Street) from US 220A (North/South Main Street) to I-73/74 US 220

SUBJECT: Geotechnical Report - Inventory

PROJECT DESCRIPTION

The project is located along East Main Street through the town of Biscoe. It consists of widening of NC 24-27 through the main business and residential section of Biscoe. Included are several small retaining walls (addressed separately). The project runs from west to east along existing East Main Street. The following alignments were investigated:

-L- Station 15+00 to 63+00
DRIVE Station 10+17.50 to 16+21.78.

Several –Y- lines were inspected but are not specifically addressed. The investigation consisted of a combination of Standard Penetration Test borings, hand auger borings, and visual observations.

SITE DESCRIPTION AND GEOLOGY

The geology is mapped as CZVe, meta-volcanic epiclastics (Geologic Map of North Carolina, N.C. Geologic Survey, 1985). No rock core samples were obtained. Soils encountered were predominantly fine-grained, silty clays and clayey silts, commonly with medium to high plasticity. Moisture content based on field classification was generally at or near optimum. The soils were at least medium stiff, commonly very stiff to hard, and weathered rock was encountered within ten feet of the ground surface in several borings. No groundwater was encountered in any boring. The borings were shallow, averaging 10 feet; the deepest was 17 feet.

AREAS OF SPECIAL GEOTECHNICAL INTEREST

Plastic Clays: Of 20 soil samples obtained, five are considered to be highly plastic. Sampling was minimal and no specific trends were evident. Plastic soils may be encountered in the subgrade at various locations. These soils are subject to rutting and pumping during compaction, and may require soil improvement techniques in order to achieve a stable subgrade.

No other specific areas of geotechnical concern were noted.

Respectfully submitted,

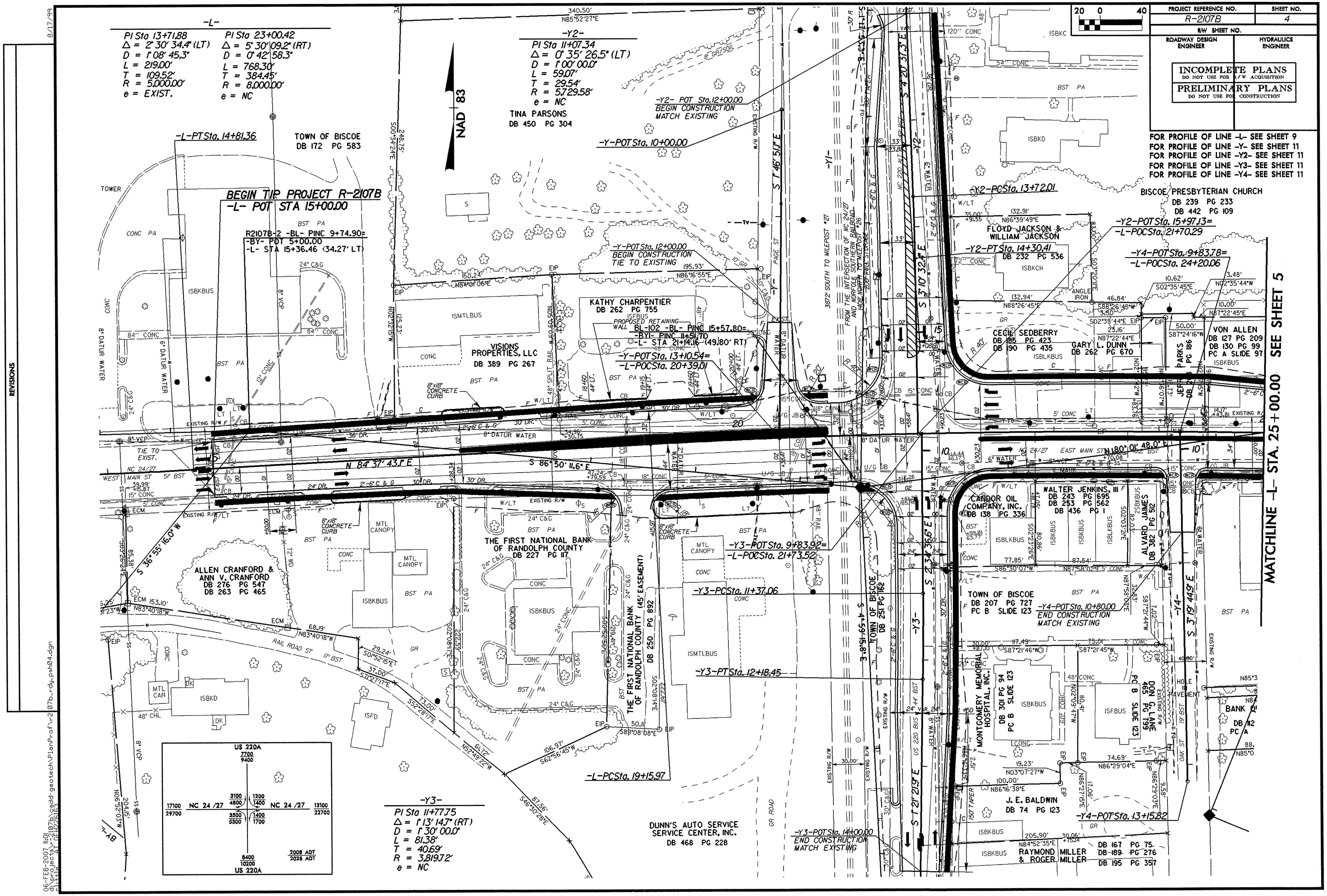
Clint Little
Regional Geologic Engineer
Geotechnical Engineering Unit
Western Regional Office

3B/12

EARTHWORK BALANCE SHEET

PROJECT: R-2107B | COUNTY: MONTGOMERY | COMP. BY: KDA | DATE: 05/13/08 | CHKD BY: IY | DATE: 08/14/08

LOCATION	EXCAVATION (CUBIC YARDS)					EMBANKMENT (CUBIC YARDS)				BORROW	WASTE (CUBIC YARDS)			
	TOTAL UNCLASS.	ROCK	UNDERCUT	UNSUITABLE UNCLASS.	SUITABLE UNCLASS.	TOTAL EMBANKMENT	ROCK EMBANKMENT	EARTH EMBANKMENT	EMBANKMENT PLUS 15%		ROCK	SUITABLE	UNSUITABLE	TOTAL
SUMMARY 1														
LEFT SIDE														
-L- 15+00 TO 38+50 LT	1,335				1,335	2,027		2,027	2,331	996				
-Y- 12+00 TO 12+50	2				2	13		13	15	13				
Y2 12+00 to 15+00	99				99	466		466	536	437				
Y5 12+00 to 12+50	5				5	41		41	47	42				
Y8 11+20 to 12+00	31				31	69		69	79	48				
RIGHT SIDE														
-L- 13+00 TO 38+50 RT	805				805	1,660		1,660	1,909	1,104				
-Y3- 11+00 TO 16+50	207				207	278		278	320	113				
Y6 11+00 TO 12+00	52				52	25		25	29			23		23
Y7 10+50 TO 11+60	62				62	13		13	15			47		47
SUMMARY 1 TOTAL	2,598				2,598	4,592		4,592	5,281	2,753		70		70
SUMMARY 2														
LEFT SIDE														
-L- 38+50 TO 63+00 LT	1,272				1,272	3,671		3,671	4,222	2,950				
DRIVE 10+17.50 TO 15+50	821				821	338		338	389			432		432
RIGHT SIDE														
-L- 38+50 TO 63+00 RT	1,892				1,892	1,302		1,302	1,497			395		395
Y9 10+50 to 11+50	483				483							483		483
Y10 10+50 to 11+00	7				7							7		7
SUMMARY 2 TOTAL	4,475				4,475	5,311		5,311	6,108	2,950		1,317		1,317
SUB-TOTAL	7,073				7,073	9,903		9,903	11,388	5,703		1,387		1,387
Borrow to replace unsuitable				500	-500	500		500	575	575		-500	500	
Loss Due to Clearing	-1,000				-1,000					1,000				
and Grubbing														
Earth Waste to Replace										-887		-887		-887
Borrow														
TOTAL	6,073			500	5,573	10,403		10,403	11,963	6,391			500	500
Estimate 5% to Relace		APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, BORROW EXCAVATION, FINE GRADING, CLEARING AND GRUBBING, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE LUMP SUM PRICE FOR "GRADING".								320				
Topsoil on Borrow Pits														
GRAND TOTAL	6,073	Note: Earthwork quantites are calcalated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface date provided by the Geotechnical Engineering Unit.								6,711				
SAY	**6,500**									**7,000**				500

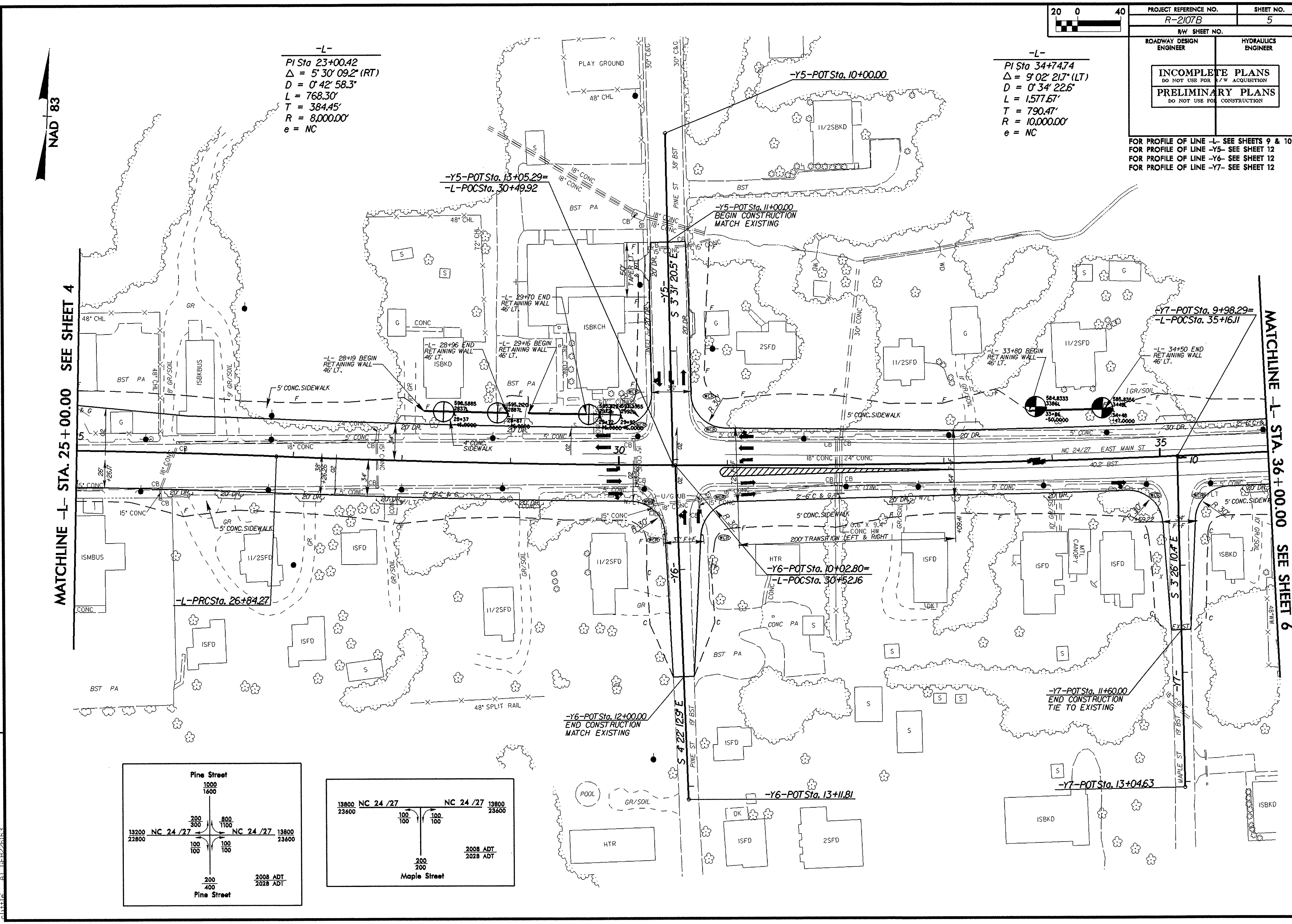

PROJECT REFERENCE NO. R-2107B
SHEET NO. 4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION
FOR PROFILE OF LINE -L- SEE SHEET 9
FOR PROFILE OF LINE -Y- SEE SHEET 11
FOR PROFILE OF LINE -Y2- SEE SHEET 11
FOR PROFILE OF LINE -Y3- SEE SHEET 11
FOR PROFILE OF LINE -Y4- SEE SHEET 11
MATCHLINE -L- STA. 25+00.00 SEE SHEET 5
-L-
PI Sta 13+71.88
Δ = 2° 30' 34.4" (LT)
D = 1° 08' 45.3"
L = 219.00'
T = 109.52'
R = 5,000.00'
e = EXIST.
PI Sta 23+00.42
Δ = 5° 30' 09.2" (RT)
D = 0° 42' 58.3"
L = 768.30'
T = 384.45'
R = 8,000.00'
e = NC
-Y2-
PI Sta 11+07.34
Δ = 0° 35' 26.5" (LT)
D = 1° 00' 00.0"
L = 59.07'
T = 29.54'
R = 5,729.58'
e = NC
-Y3-
PI Sta 11+77.75
Δ = 1° 13' 14.7" (RT)
D = 1° 30' 00.0"
L = 81.38'
T = 40.69'
R = 3,819.72'
e = NC
NAD 83
BEGIN TIP PROJECT R-2107B
-L- POT STA 15+00.00
R2107B-2 -BL- PINC 9+74.90=
-BY- POT 5+00.00
-L- STA 15+36.46 (34.27' LT)
-L-PT Sta. 14+81.36
-L-PC Sta. 19+15.97
-Y-POT Sta. 10+00.00
-Y-POT Sta. 12+00.00 BEGIN CONSTRUCTION TIE TO EXISTING
-Y-POT Sta. 13+10.54= -L-POC Sta. 20+39.01
-Y2- POT Sta. 12+00.00 BEGIN CONSTRUCTION MATCH EXISTING
-Y2-PC Sta. 13+72.01
-Y2-PT Sta. 14+30.41
-Y2-POT Sta. 15+97.13= -L-POC Sta. 21+70.29
-Y3-POT Sta. 9+83.92= -L-POC Sta. 21+73.52
-Y3-PC Sta. 11+37.06
-Y3-PT Sta. 12+18.45
-Y3-POT Sta. 14+00.00 END CONSTRUCTION MATCH EXISTING
-Y4-POT Sta. 9+83.78= -L-POC Sta. 24+20.06
-Y4-POT Sta. 10+80.00 END CONSTRUCTION MATCH EXISTING
-Y4-POT Sta. 13+15.82
BL-102 -BL- PINC 15+57.80= -BYI- PINC 11+51.70 -L- STA 21+14.16 (49.80' RT)
PROPOSED RETAINING WALL
N 84° 37' 43.1" E
S 86° 50' 11.6" E
N 80° 01' 48.0" E
S 36° 55' 16.0" W
TOWN OF BISCOE DB 172 PG 583
TINA PARSONS DB 450 PG 304
VISIONS PROPERTIES, LLC DB 389 PG 267
KATHY CHARPENTIER DB 262 PG 755
ALLEN CRANFORD & ANN V. CRANFORD DB 276 PG 547 DB 263 PG 465
THE FIRST NATIONAL BANK OF RANDOLPH COUNTY DB 227 PG 117
THE FIRST NATIONAL BANK OF RANDOLPH COUNTY (45' EASEMENT) DB 250 PG 892
TOWN OF BISCOE DB 251 PG 162
DUNN'S AUTO SERVICE SERVICE CENTER, INC. DB 468 PG 228
BISCOE PRESBYTERIAN CHURCH DB 239 PG 233 DB 442 PG 109
FLOYD JACKSON & WILLIAM JACKSON DB 232 PG 536
CECIL SEDBERRY DB 185 PG 423 DB 190 PG 435
GARY L. DUNN DB 262 PG 670
VON ALLEN DB 127 PG 209 DB 130 PG 99 PC A SLIDE 97
CANDOR OIL COMPANY, INC. DB 138 PG 336
WALTER JENKINS, III DB 243 PG 695 DB 253 PG 562 DB 436 PG 1
ALVARO JAIMES DB 382 PG 512
TOWN OF BISCOE DB 207 PG 727 PC B SLIDE 123
MONTGOMERY MEMORIAL HOSPITAL, INC. DB 301 PG 94 PC B SLIDE 123
DON G. LANE 465 PG 799 PC B SLIDE 123
J. E. BALDWIN DB 74 PG 123
RAYMOND MILLER & ROGER MILLER DB 167 PG 75 DB 189 PG 276 DB 195 PG 357
WEST MAIN ST
EAST MAIN ST
NC 24/27
PAGE ST
RAIL ROAD ST
OAK ST
US 220 BUS
US 220A
NC 24 /27
2008 ADT
2028 ADT
REVISIONS
8/17/99
06-FEB-2007 11:01

PROJECT REFERENCE NO.	SHEET NO.
R-2107B	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR PROFILE OF LINE -L- SEE SHEETS 9 & 10
FOR PROFILE OF LINE -Y5- SEE SHEET 12
FOR PROFILE OF LINE -Y6- SEE SHEET 12
FOR PROFILE OF LINE -Y7- SEE SHEET 12



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REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
R-2107B	6
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR PROFILE OF LINE -L- SEE SHEET 9 & 10
FOR PROFILE OF LINE -Y8- SEE SHEET 12
FOR PROFILE OF LINE -Y9- SEE SHEET 13

MATCHLINE -L- STA. 36+00.00 SEE SHEET 5

MATCHLINE -L- STA. 47+00.00 SEE SHEET 7

NAD 83

-L-
PI Sta 34+74.74
Δ = 9° 02' 21.7" (LT)
D = 0° 34' 22.6"
L = 1,577.67'
T = 790.47'
R = 10,000.00'
e = NC

-L-
PI Sta 43+80.69
Δ = 1° 21' 38.6" (RT)
D = 0° 34' 22.6"
L = 237.49'
T = 118.75'
R = 10,000.00'
e = NC

2008 ADT / 2028 ADT — Brendana Drive
200/200 | 100/100 | 100/100
13800/23600 NC 24 /27 NC 24 /27 13800/23600

-Y8-POT Sta. 10+00.00

-Y8-POT Sta. 11+20.00
BEGIN CONSTRUCTION
MATCH EXISTING

-L-PRC Sta. 42+61.94

-L-PT Sta. 44+99.42

-Y8-POT Sta. 12+70.98=
-L-POC Sta. 37+92.09

-Y9-POT Sta. 9+95.26=
-L-POT Sta. 42+77.32

-Y9- POT Sta. 11+50.00
END CONSTRUCTION
MATCH EXISTING

-Y9-POT Sta. 12+99.92

JEAN P. BREWER
DB 164 PG 340
PC A SLIDE 50

D. W. HURLEY
DB 163 PG 7
PC A SLIDE 50

WALTER JENKINS, JR.
DB 455 PG 372

CECIL L. MILLS, JR.
DB 470 PG 17

BOBBIE BREWER
DB 376 PG 380

MICHAEL FOUSHEE
DB 432 PG 354

JOEL CAGLE
DB 142 PG 27

CHOICE INVESTMENT, INC.
DB 313 PG 646

MONTGOMERY MUNICIPAL A.B.C. BOARD
DB 252 PG 744

WINFRED LEMONDS
DB 228 PG 01
PC A SLIDE 97

NICKY L. GARNER
DB 355 PG 719
PC A SLIDE 50
PC A SLIDE 97

ELIZABETH ASHMAN
DB 268 PG 791
PC A SLIDE 50

JOHN MONROE
DB 110 PG 241
PC A SLIDE 50

FARRELL W. ALMAN, III
DB 435 PG 889
PC A SLIDE 50

MYRA MANESS
DB 471 PG 166
PC A SLIDE 50

ALAN MARTIN
DB 305 PG 837
PC A SLIDE 50

SHERRY R. BENNETT
DB 328 PG 794
PC A SLIDE 50

13800/23600 NC 24 /27 NC 24 /27 13800/23600
100/100 | 100/100
200/200
Cedar Street — 2008 ADT / 2028 ADT

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REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
R-2107B	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR PROFILE OF LINE -L- SEE SHEET 10
FOR PROFILE OF LINE -DRIVE- SEE SHEET 13
FOR PROFILE OF LINE -Y10- SEE SHEET 13

MATCHLINE -L- STA. 47+00.00 SEE SHEET 6

MATCHLINE -L- STA. 58+00.00 SEE SHEET 8

NAD 83

DOZIER PROPERTIES, INC.
DB 254 PG 477

-DRIVE-
PI Sta 13+72.20
Δ = 91° 20' 38.9" (LT)
D = 71° 37' 11.0"
L = 127.54'
T = 81.90'
R = 80.00'
e = NC

-DRIVE-PCSta. 12+90.31

-DRIVE-POTSta. 10+00.00

-DRIVE-POTSta. 10+17.50
BEGIN CONSTRUCTION

-DRIVE- S 8° 47' 48.2" W

RICHARD VAUGHN
DB 248 PG 224
DB 238 PG 783

-L-POTSta. 52+42.63=
-DRIVE-POTSta. 16+54.78
-Y10-POTSta. 9+91.97

-DRIVE-PTSta. 14+17.85

S 7° 32' 50.7" E

BL-I08 -BL- PINC 47+14.36=
-BY7- POT 5+00.00
-L- STA. 52+56.76 (25.38' LT)

BEGIN FENCE
-DRIVE- STA 15+45

PROPOSED RETAINING WALL
-L- 53+92.00 TO 54+75.00

DREAMY HOLLOW APARTMENTS, CO.
DB 332 PG 563

HARDEE'S FOOD SYSTEM, INC.
DB 451 PG 382

-L- STA 56+48.36
END FENCE
TIE TO

N 81° 38' 06.2" E

N 82° 27' 09.3" E

-Y10-
PI Sta 11+53.56
Δ = 10° 33' 56.9" (RT)
D = 4° 15' 00.0"
L = 248.61'
T = 124.66'
R = 1,348.14'
e = EXIST.

-Y10-PCSta. 10+28.90

-Y10-PCCSta. 11+00.00
END CONSTRUCTION
MATCH EXISTING

-Y10-PTSta. 12+77.51

S 8° 48' 56.3" W

-Y10-POTSta. 12+97.61

BY7-121 POT 8+52.25

-L-
PI Sta 60+46.66
Δ = 2° 30' 33.0" (RT)
D = 0° 28' 38.9"
L = 525.52'
T = 262.80'
R = 12,000.00'
e = NC

-L-PCSta. 57+83.86

ALBERT HUDSON
DB 494 PG 419
PC A SLIDE 50

NORMAN W. LYERLY
DB 125 PG 297
DB 158 PG 598

CITATION CAROLINA CORPORATION
DB 240 PG 267

CITATION CAROLINA CORPORATION
DB 240 PG 267

Food Lion Shopping Center

3300 / 4800			
2300 / 3500	1000 / 1300		
13800 / 23600	NC 24/27	NC 24/27	11600 / 20000
	1200 / 1800	300 / 400	
	1600 / 2200	2008 ADT / 2028 ADT	

McCaskill Street

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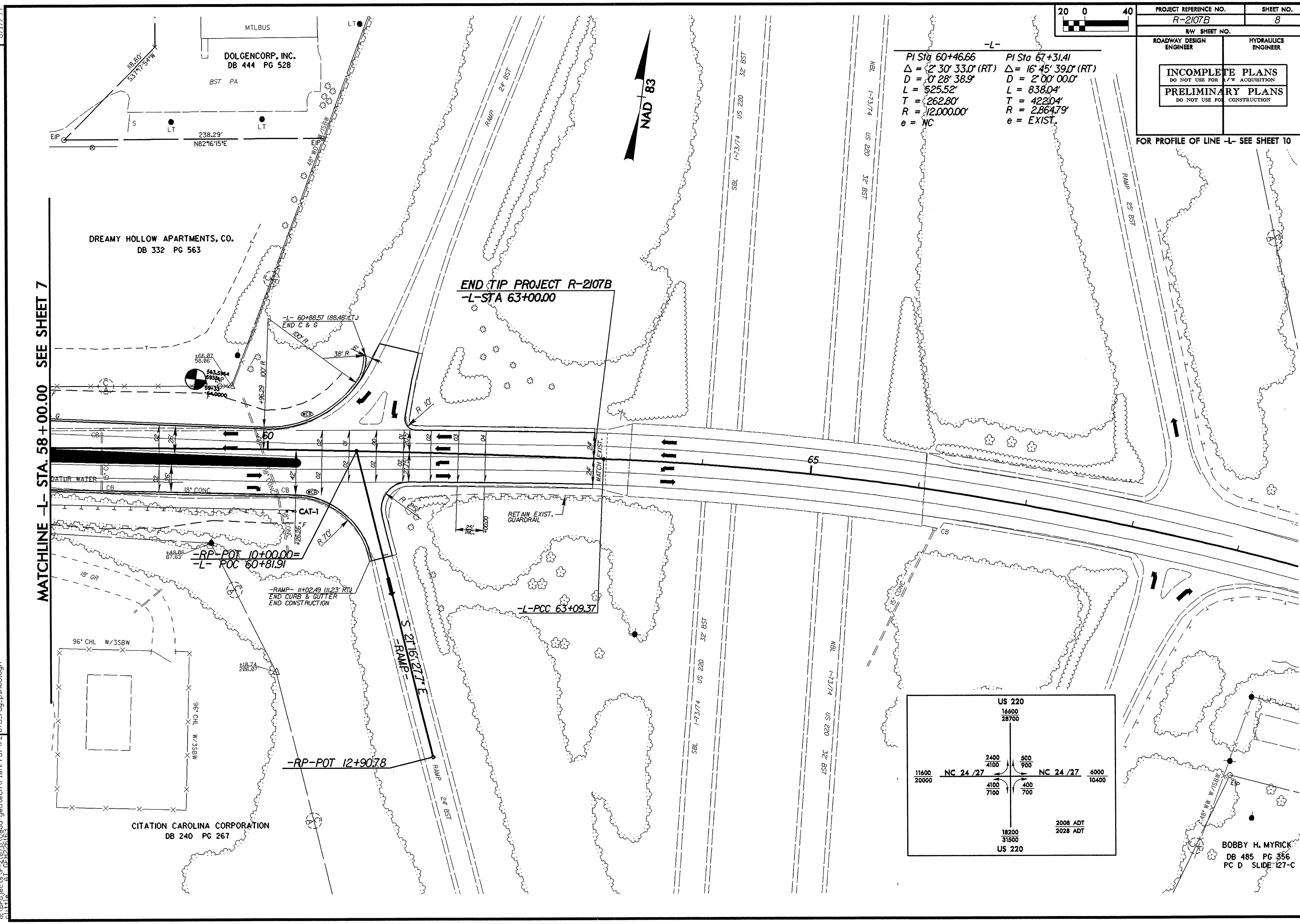

PROJECT REFERENCE NO. R-2107B
SHEET NO. 8
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION
FOR PROFILE OF LINE -L- SEE SHEET 10
-L-
PI Sta 60+46.66
Δ = 2° 30' 33.0" (RT)
D = 0° 28' 38.9"
L = 525.52'
T = 262.80'
R = 12,000.00'
e = NC
PI Sta 67+31.41
Δ = 16° 45' 39.0" (RT)
D = 2° 00' 00.0"
L = 838.04'
T = 422.04'
R = 2,864.79'
e = EXIST.
NAD 83
MATCHLINE -L- STA. 58+00.00 SEE SHEET 7
DOLGENCORP, INC.
DB 444 PG 528
DREAMY HOLLOW APARTMENTS, CO.
DB 332 PG 563
END TIP PROJECT R-2107B
-L- STA 63+00.00
-L- 60+88.57 (88.48' LT)
END C & G
-RP- POT 10+00.00=
-L- POC 60+81.91
-RAMP- 11+02.49 (11.23' RT)
END CURB & GUTTER
END CONSTRUCTION
-L- PCC 63+09.37
RETAIN EXIST. GUARDRAIL
S 21°16'27.7" E
-RAMP-
-RP- POT 12+90.78
CITATION CAROLINA CORPORATION
DB 240 PG 267
BOBBY H. MYRICK
DB 485 PG 356
PC D SLIDE 127-C
SBL I-73/74 US 220 32' BST
NBL I-73/74 US 220 32' BST
RAMP 24' BST
RAMP 25' BST
US 220
16600
28700
NC 24 /27
11600
20000
2400
4100
500
900
4100
7100
400
700
6000
10400
18200
31500
2008 ADT
2028 ADT
REVISIONS
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5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R-2107B	9

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR PLAN OF LINE -L- SEE SHEETS 4 & 5

-L-

RR

-Y4-

PI = 23+55.00
EL = 622.34'
VC = 110'
K = 52

PI = 21+02.83
EL = 617.18'

PI = 20+93.89
EL = 617.23'

L = 0.5592%

(+)2.1957%

(-)4.3925%

(+)10.000%

(+)10.000%

(+)1.9825%

BEGIN GRADE
-L- STA. 13+00.00
ELEV. = 607.21

PI = 16+30.00
EL = 609.30'
VC = 120'
K = 320

(+)1.1601%

(+)1.9825%

PI = 20+30.00
EL = 617.23'
VC = 127'
K = 64

PI = 21+20.00
EL = 617.18'

-Y3- STA. 9+83.92 =
-L- STA. 21+73.52

13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00 25+00 26+00 27+00

650 640 630 620 610 600 590 580 570 560

BM-2 RR SPIKE IN BASE OF POWER POLE (CP&L #3128) RIGHT OF CENTER LINE OF PINE STREET. 359.56 LT. OF -BL- STA. 24+20.93 (-L- STA. 36+18.03 OFF 338.29' (LT)) ELEV. = 595.27

FOR PLAN OF LINE -L- SEE SHEETS 5 & 6

-Y5-

-Y7-

-Y8-

-Y6-

A ROADWAY EMBANKMENT FILL & ARTIFICIAL FILL (PARKING LOT) GRAY MED STIFF MOIST/WET SILTY CLAY

B RESIDUAL RED TO TAN-WHITE V. STIFF TO HARD MOIST SILTY CLAY

S-6 S-9 S-8 S-7 S-5

28+37 -46.0000
28+97 -46.0000
29+22 -46.0000
29+72 46.0000

PI = 31+50.00
EL = 587.42'
VC = 325'
K = 64

(-)4.3925%

(+)0.6505%

SS-7 SS-8 SS-9 SS-8

33+86 -50.0000
34+48 -47.0000

S-3 S-2 S-4

38+28 -50.0000

DRY 11-06 BT

RESIDUAL TAN STIFF MOIST SILTY CLAY

RESIDUAL TAN V STIFF MOIST CLAYEY SANDY SILTY CLAY

RESIDUAL TAN&GRAY HARD MOIST SILTY CLAYEY SAND

RESIDUAL TAN-WHITE HARD MOIST SANDY CLAYEY SILT

WEATHERED ROCK

ROADWAY EMBANKMENT TAN-GRAY STIFF MOIST CLAYEY SILT

RESIDUAL TAN V STIFF MOIST SILTY CLAY

27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00 37+00 38+00 39+00 40+00 41+00

640 630 620 610 600 590 580 570 560 550

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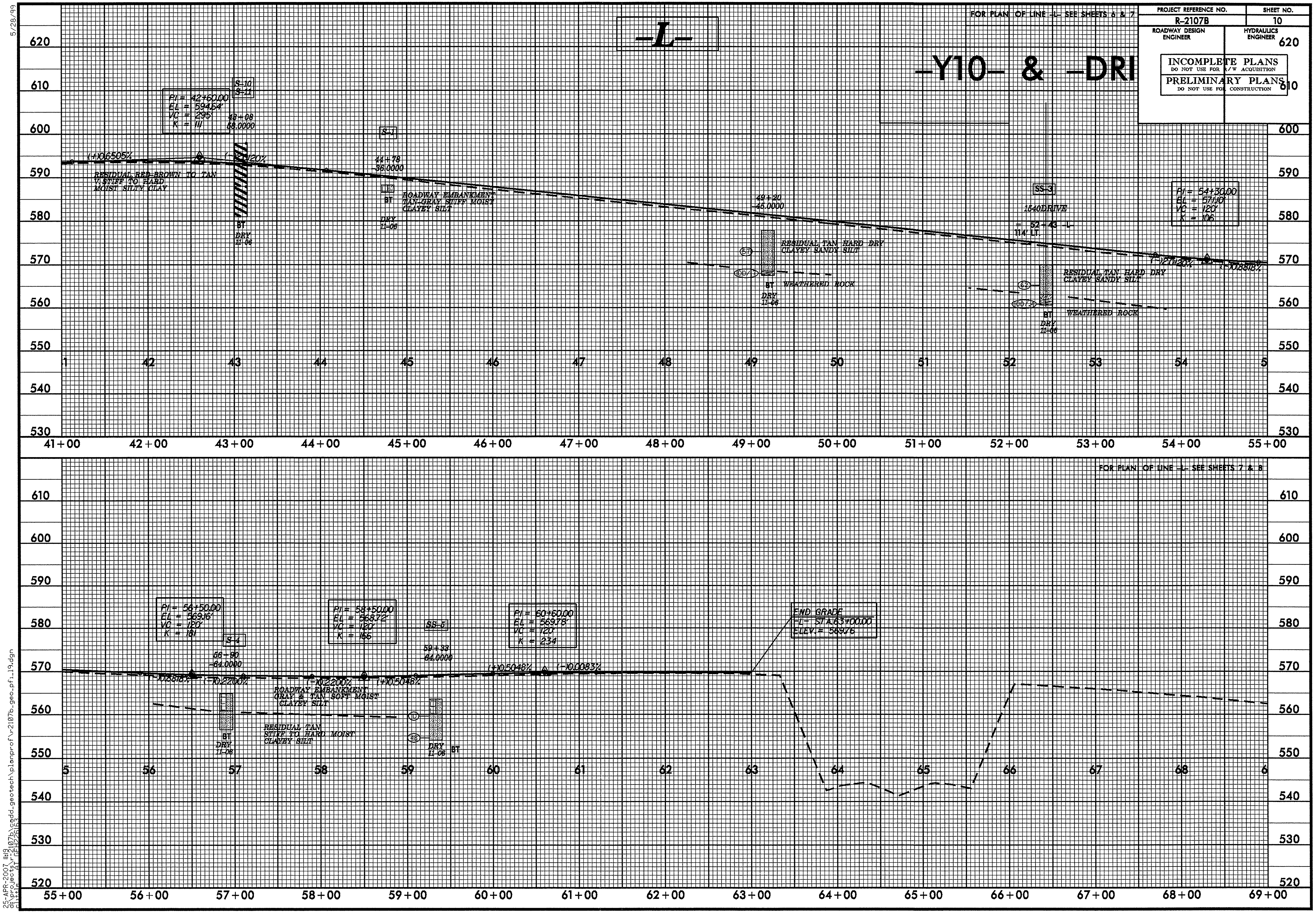

PROJECT REFERENCE NO.
R-2107B
SHEET NO.
10
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
FOR PLAN OF LINE -L- SEE SHEETS 6 & 7
-L-
-Y10- & -DRI
5/28/99
PI = 42+60.00
EL = 594.54'
VC = 295'
K = 111
S-10
S-11
43+08
58.0000
(+)0.6505%
RESIDUAL RED-BROWN TO TAN V. STIFF TO HARD MOIST SILTY CLAY
S-1
44+78
36.0000
ROADWAY EMBANKMENT TAN-GRAY STIFF MOIST CLAYEY SILT
BT
DRY
11-06
49+20
46.0000
RESIDUAL TAN HARD DRY CLAYEY SANDY SILT
WEATHERED ROCK
SS-3
1540DRIVE
52+43 -L-
114 LT.
RESIDUAL TAN HARD DRY CLAYEY SANDY SILT
WEATHERED ROCK
PI = 54+30.00
EL = 571.10'
VC = 120'
K = 106
(-)0.2120%
(-)0.0881%
41+00
42+00
43+00
44+00
45+00
46+00
47+00
48+00
49+00
50+00
51+00
52+00
53+00
54+00
55+00
FOR PLAN OF LINE -L- SEE SHEETS 7 & 8
PI = 56+50.00
EL = 569.16'
VC = 120'
K = 181
S-4
56+90
64.0000
PI = 58+50.00
EL = 568.72'
VC = 120'
K = 166
SS-5
59+33
64.0000
PI = 60+50.00
EL = 569.78'
VC = 120'
K = 234
END GRADE
-L- STA.63+00.00
ELEV. = 569.76
(-)0.0881%
(-)0.2200%
(+)0.5048%
(+)0.0083%
ROADWAY EMBANKMENT GRAY & TAN SOFT MOIST CLAYEY SILT
RESIDUAL TAN STIFF TO HARD MOIST CLAYEY SILT
55+00
56+00
57+00
58+00
59+00
60+00
61+00
62+00
63+00
64+00
65+00
66+00
67+00
68+00
69+00
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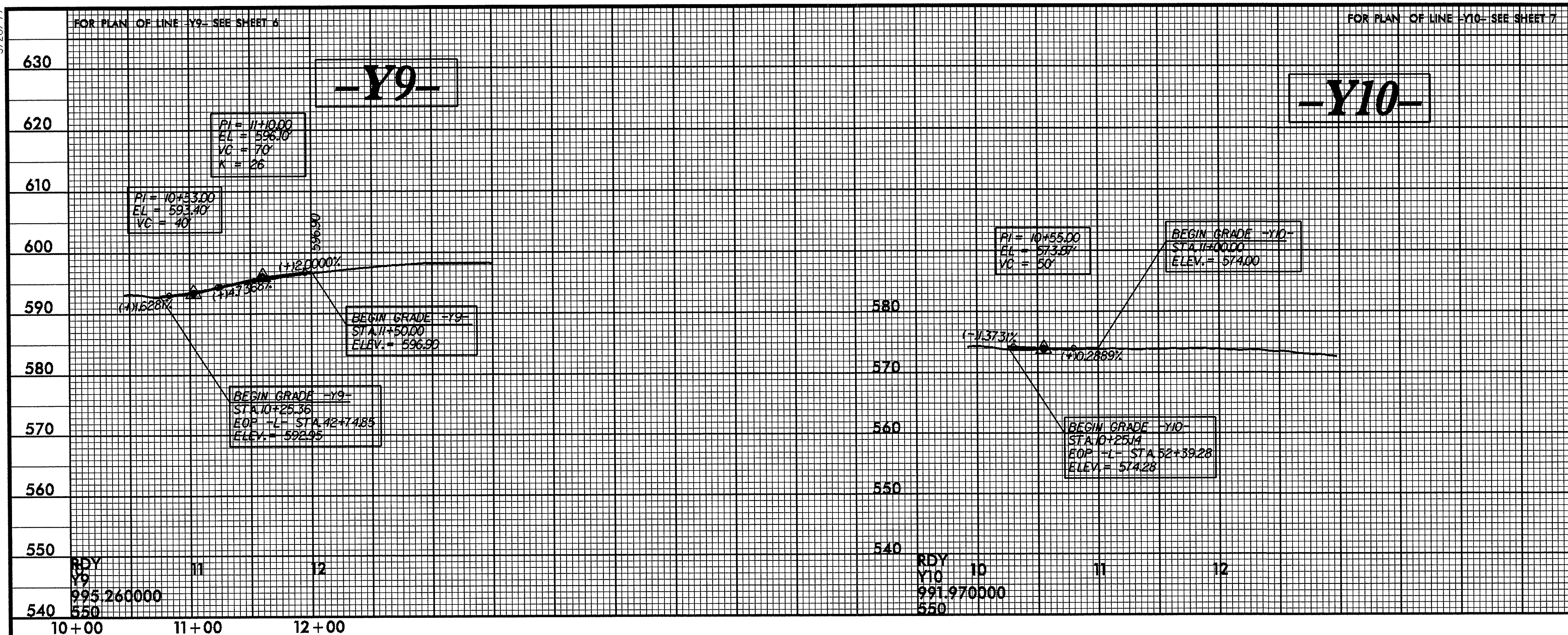
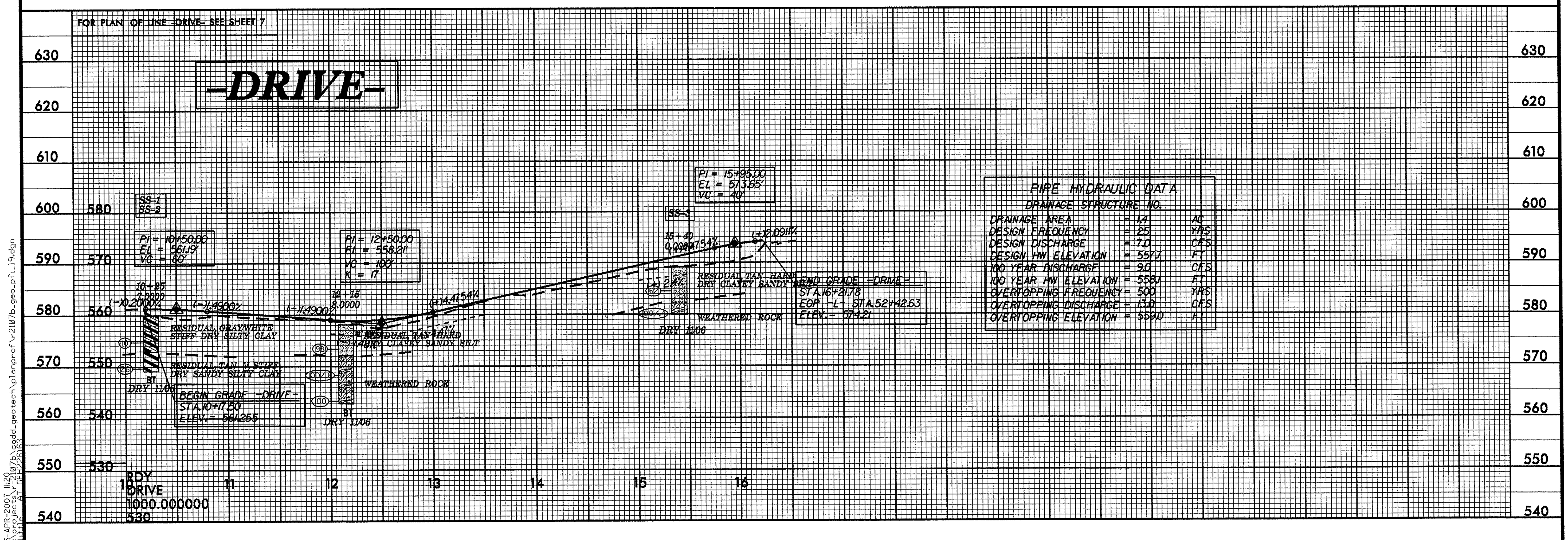
PROJECT REFERENCE NO.	SHEET NO.
R-2107B	11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION





PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 1.4	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 7.0	CFS
DESIGN HW ELEVATION	= 557.7	FT
100 YEAR DISCHARGE	= 9.0	CFS
100 YEAR HW ELEVATION	= 558.1	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 13.0	CFS
OVERTOPPING ELEVATION	= 559.0	FT

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-1	36 LT	44+78	0.0-1.5	A-4(0)	22	2	5.6	8.2	66.1	20.0	84	80	75	-	-
S-2	50 LT	38+28	0.0-1.0	A-4(5)	32	6	7.0	6.0	60.9	26.1	94	89	84	-	-
S-3	50 LT	38+28	1.0-4.0	A-6(15)	40	15	3.2	3.4	51.3	42.1	94	92	89	-	-
S-4	50 LT	38+28	4.0-5.0	A-7-6(30)	56	27	1.0	5.8	39.1	54.1	100	99	95	-	-
S-5	46 LT	29+72	0.0-1.1	A-6(5)	36	12	20.2	9.6	48.1	22.0	83	71	60	-	-
S-6	46 LT	29+22	1.2-4.0	A-7-5(47)	77	42	2.0	2.2	27.7	68.1	95	94	92	-	-
S-7	46 LT	29+22	4.0-5.0	A-7-5(34)	63	33	6.4	6.0	27.5	60.1	100	95	89	-	-
S-8	46 LT	28+87	0.0-2.0	A-6(9)	38	14	14.4	7.0	36.5	42.1	89	80	72	-	-
S-9	46 LT	28+87	2.0-5.1	A-7-6(39)	63	35	1.8	5.2	30.9	62.1	100	99	95	-	-
SS-1	7 RT	10+25	4.7-5.7	A-6(12)	35	13	2.8	10.8	48.3	38.1	100	99	90	-	-
SS-2	7 RT	10+25	9.7-10.7	A-7-6(9)	43	15	16.0	19.0	38.9	26.1	92	83	64	-	-
SS-3	C/L	15+40	4.3-5.3	A-4(2)	30	9	25.1	20.8	32.1	22.0	91	75	53	-	-
S-4	64 RT	56+90	0.0-4.0	A-4(0)	25	NP	2.8	4.4	78.8	14.0	99	97	93	-	-
SS-5	64 LT	59+33	3.5-4.5	A-4(5)	35	7	13.8	16.4	45.7	24.0	100	92	74	-	-
SS-6	47 LT	34+48	4.5-5.5	A-4(4)	34	7	20.2	18.6	35.1	26.1	100	89	65	-	-
SS-7	50 LT	33+86	0.5-1.5	A-6(9)	33	12	5.2	8.4	52.3	34.1	92	89	82	-	-
SS-8	50 LT	33+86	4.7-5.7	A-7-6(8)	45	19	20.8	23.8	29.3	26.1	91	77	56	-	-
SS-9	50 LT	33+86	7.2-8.2	A-2-6(1)	36	17	42.9	14.4	18.6	24.0	75	49	34	-	-
S-10	58 RT	43+08	0.0-10.0	A-7-5(68)	93	55	0.2	0.8	22.8	76.2	100	100	99	-	-
S-11	58 RT	43+08	10.0-17.0	A-7-5(24)	50	20	0.4	4.6	46.9	48.1	100	100	97	-	-